and good transference of heat) was reduced by the carbon as rapidly as it could be dissolved by the slag, so that the iron content of the latter did nofc rise.
If one considers this charge from the moment of the first ore addition, i.e., from 90 minutes, up to the end of the same, one finds
Iron contained in 20'5 percent. Ore=20'5xO-9SxO'7 = 14-0 per cent. Remaining in 20 per cent, final slag=20 X 0*1352 = j;7 „
Iron reduced . . =11 "3 per cent. Reducing agents removed. 3-71 per cent. C-j-2'20
per cent. Mn-f-0*17 per cent. Si+0'13 per cent. P =6 '31
Charge growth, hence = 4*99
say 5*0 per cent. It should have been
8-71Cxl-47 + 0-17SiXl+0'18Px2— 2-20MnXO'97=5'18per cent.
It has thus fallen somewhat too low, and actually due to that instead of the requisite addition of 17*7 per cent., this time 20*5 per cent, was employed. The too large ore addition has thus only a little damaged the yield, but the ore had been badly utilised, and in addition the previously quoted evils of strongly chilled and over-oxidised metal had made their appearance, as is to be perceived from the remarks accompanying the results of analysis.
mi. 4. i ;i j • j. 20,018x1-05 ,An
The steel produced per minute was — 0 r - =100
-aJLU
kilogrammes, and this high figure clearly shows the effect which the preheating exercised in acceleration of the endothermic carbon reaction One perceives from the diagram a difference from the earlier ones, since now the carbon already within the first 15 minutes laid claim to more than half th^ oxygen used up, whilst it was satisfied in the previously considered examples with less than one-third.
The quantity of oxygen rendered active per minute amounts
in the present case, however, to only 20,018 x (0-0704-0-0452)
-410
= about 5*2 kilogrammes, and is thus smaller than in all previously considered examples.
The ground for this remarkable result appearing is simple : the metal contained at the